

Title (en)

Valve opening-closing timing control apparatus

Title (de)

Steuerungsvorrichtung der Öffnungs- und Schließzeit eines Ventils

Title (fr)

Appareil de contrôle des temps d'ouverture et de fermeture de soupape

Publication

EP 2708707 A2 20140319 (EN)

Application

EP 13184826 A 20130917

Priority

- JP 2012204822 A 20120918
- JP 2013058392 A 20130321

Abstract (en)

A valve opening-closing timing control apparatus includes a partition portion (7) partitioning a fluid pressure chamber (6) into an advanced angle chamber (6a) and a retarded angle chamber (6b), a phase control portion (2) controlling a rotational phase of a driven-side rotational member (5) relative to a driving-side rotational member (3), a lock mechanism (9, 62, 80) including a lock member (92a, 92b) and a lock recess (60, 81, 93) for locking the rotational phase at a predetermined phase, a lock control portion (100) switching the lock mechanism (9, 62, 80) between a locked state and an unlocked state by supplying and discharging a pressurized fluid to and from the lock recess (60, 81, 93), a phase controlling supply passage (70) supplying the pressurized fluid to the advanced angle chamber (6a) and the retarded angle chamber (6b), a lock controlling supply passage (71) supplying the pressurized fluid to the lock recess (60, 81, 93), and a one-way valve (63) blocking the pressurized fluid supplied to the lock controlling supply passage (71) from flowing into the phase controlling supply passage (70).

IPC 8 full level

F01L 1/344 (2006.01); **F01L 9/10** (2021.01)

CPC (source: EP US)

F01L 1/344 (2013.01 - US); **F01L 1/3442** (2013.01 - EP US); **F01L 2001/34433** (2013.01 - EP US); **F01L 2001/34456** (2013.01 - EP US); **F01L 2001/34476** (2013.01 - EP US)

Citation (applicant)

- JP 2004257313 A 20040916 - AISIN SEIKI
- JP 2010084756 A 20100415 - AISIN SEIKI

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

DOCDB simple family (publication)

EP 2708707 A2 20140319; **EP 2708707 A3 20150729**; **EP 2708707 B1 20160706**; CN 103670567 A 20140326; CN 103670567 B 20170609; JP 2014077433 A 20140501; JP 6094296 B2 20170315; US 2014076254 A1 20140320; US 8960142 B2 20150224

DOCDB simple family (application)

EP 13184826 A 20130917; CN 201310412614 A 20130911; JP 2013058392 A 20130321; US 201314025429 A 20130912